CLAIMS

1. Method to generate a pseudo-random sequence (PRMS1) of multi-carrier data symbols (DMT0, DMT1, DMT2), said method comprising:

a. producing a pseudo-random bit sequence (PRBS1) by repetitively generating a pseudo-random sequence of L bits, L being a first integer value (L=4);

b. packetizing into multi-carrier data symbols (DMT0, DMT1, DMT2) thereby using N bits of said pseudo-random bit sequence (PRBS1) per multi-carrier data symbol (DMT0, DMT1, DMT2), N being a second integer number (N=8), to thereby generate said pseudo-random sequence (PRMS1) of multi-carrier data symbols (DMT0, DMT1, DMT2),

CHARACTERIZED IN THAT said packetizing comprises:

b1. dividing said pseudo-random bit sequence (PRBS1) into strings of N' bits, N' being a third integer value larger than N (N'=9); and

b2. using N bits out of each string of N' to generate a multi-carrier data symbol (DMT0, DMT1, DMT2) out of said pseudo-random sequence (PRMS1) of multi-carrier data symbols (DMT0, DMT1, DMT2), and leaving N'-N bits out of each string of N' bits unused.

2. Generator (PR-GEN1) of a pseudo-random sequence (PRMS1) of multi-carrier data symbols (DMT0, DMT1, DMT2), said generator (PR-GEN1) comprising:

a. scrambling means (SCR1), adapted to repetitively generate a pseudo-random sequence of L bits, L being a first integer value (L=4), to thereby produce a pseudo-random bit sequence (PRBS1);

b. packetizing means, adapted to packetize into multi-carrier data symbols (DMT0, DMT1, DMT2) using N bits of said pseudo-random bit sequence (PRBS1) per multi-carrier data symbol (DMT0, DMT1, DMT2), N being a second integer number (N=8), to thereby generate said pseudo-

random sequence (PRMS1) of multi-carrier data symbols (DMT0, DMT1, DMT2),

CHARACTERIZED IN THAT said packetizing means comprises:

b1. dividing means (DIV1), adapted to divide said pseudo-random bit sequence (PRBS1) into strings of N' bits, N' being a third integer value larger than N (N'=9); and

b2. multi-carrier data symbol generating means (EMB1), adapted to use N bits out of each string of N' bits to generate a multi-carrier data symbol (DMT0, DMT1, DMT2) out of said pseudo-random sequence (PRMS1) of multi-carrier data symbols (DMT0, DMT1, DMT2) and to leave N'-N bits out of each string of N' bits unused.

3. Multi-carrier transmitter (MC-TX) comprising a pseudo-random sequence generator (PR-GEN1) as defined by claim 1, and further comprising transmitting means (TX), coupled to said pseudo-random sequence generator (PR-GEN1), and adapted to transmit a pseudo-random sequence (PRMS1) of multi-carrier symbols (DMT0, DMT1, DMT2) generated by said pseudo-random sequence generator (PR-GEN1) over a communication channel (CHANNEL).

4. Multi-carrier transmitter (MC-TX) according to claim 3,

CHARACTERIZED IN THAT said multi-carrier transmitter (MC-TX) further comprises selection means (SEL), adapted to select said third integer value N', and communication means (COM) coupled to said selection means (SEL), and adapted to communicate said third integer value N' to a multi-carrier receiver (MC-RX).

5. Multi-carrier transmitter (MC-TX) according to claim 4,

CHARACTERIZED IN THAT said selection means (SEL) is adapted to select said third integer value N' so that N' differs from L-1, so that N' differs from L+1, and so that N' is not fractionally related to L.

6. Multi-carrier receiver (MC-RX) comprising a pseudo-random sequence generator (PR-GEN2) as defined by claim 1, and further comprising receiving means (RX) adapted to receive a first pseudo-random sequence (PRMS1') of multi-carrier symbols transmitted over a communication channel (CHANNEL), and decoding means (DECODER), coupled to said receiving means (RX) and to said pseudo-random sequence generator (PR-GEN2), and adapted to decode said first pseudo-random sequence (PRMS1') of multi-carrier symbols and a second pseudo-random sequence (PRMS2) of multi-carrier symbols generated by said pseudo-random sequence generator (PR-GEN2).